



CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005



Job No.: CTCE/BBMP/W.No.07/NVP/CSR-9/967d/CEMENT/2015-16

Date: 08.10.2015

TEST REPORT ON CEMENT

* CUSTOMER	: Asst. Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
* AGENCY	: Mr. Ningana Gowda V Patil, No.57/7, Sri. Krishna Nilaya, 2 nd Main Road, Ganganagara Layout, Ganganagara, R.T. Nagara Post, Bangalore - 560032.
* NAME OF THE WORK	: Improvements of roads and drains in Amruthanagara 'C' Sector Main roads in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
* REFERENCE	: AEE/(B.T.P.SUB.DIV)/236/2015-16 Dated: 06.10.2015
SAMPLE ID	: Cement
SAMPLE RECEIVED ON	: 06.10.2015
PERIOD OF TESTING	: 06.10.2015 to 08.10.2015



The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	145 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	485 Minutes	Not More than 600 Minutes
3	Soundness by Le Chatelier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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- ⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

VISHWANATH .C
Quality Manager

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Job No.: CTCE/BBMP/W.No.07/NVP/CSR-9/967d/SAND-Gradation/2015-16

: 08.10.2015

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

* **Customer** : Asst. Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

* **Agency** : Mr. Ninganagowda V Patil,
No.57/7, Sri. Krishna Nilaya, 2nd Main Road, Ganganagara Layout,
Ganganagara, R.T. Nagara Post, Bangalore - 560032.

* **Name of Work** : Improvements of roads and drains in Amruthanagara 'C' Sector Main roads in
Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(B.T.P.SUB.DIV)/236/2015-16 Dated: 06.10.2015

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 06.10.2015

Date of Testing : 08.10.2015



Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	93.50	90-100	90-100	90-100	95-100
2.36	74.50	60-95	75-100	85-100	95-100
1.18	53.50	30-70	55-90	75-100	90-100
600 Micron	24.00	15-34	35-59	60-79	80-100
300 Micron	10.40	5-20	8-30	12-40	15-50
150 Micron	4.50	0-10	0-10	0-10	0-15

Information is furnished by the Customer/Representative

Remarks: This sample is under Zone-I specific limits.

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Job No.: CTCE/BBMP/W.No.07/NVP/CSR-9/967d/AGG/GR/2015-16

: 08.10.2015

TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

* **Customer** : Asst. Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

* **Agency** : Mr. Ninganagowda V Patil,
No.57/7, Sri. Krishna Nilaya, 2nd Main Road, Ganganagara Layout,
Ganganagara, R.T. Nagara Post, Bangalore - 560032.

* **Name of Work** : Improvements of roads and drains in Amruthanagara 'C' Sector Main roads in
Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

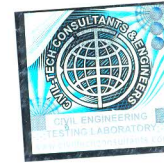
Reference : AEE/(B.T.P.SUB.DIV)/236/2015-16 Dated: 06.10.2015

Technical Reference : IS : 2386 Part 1 -1963 RA-2007

Sample ID : Coarse Aggregates (40mm)

Sample Received on : 06.10.2015

Date of Testing : 08.10.2015



Total Wt. of Aggregates in gms= 10000

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	97.50	95-100	85-100
20	37.50	30-70	0-20
10	12.50	10-35	0-5
4.75	4.00	0-5	-

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore



Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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Job No.: CTCE/BBMP/W.No.07/NVP/CSR-9/967d/CUBE/2015-16

26.11.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer : Asst. Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

* Agency : Mr. Ninganagowda V Patil,
No.57/7, Sri. Krishna Nilaya, 2nd Main Road, Ganganagara Layout,
Ganganagara, R.T. Nagara Post, Bangalore - 560032.

* Name of the work : Improvements of roads and drains in Amruthanagara 'C' Sector Main roads in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

* Reference : AEE/(B.T.P.SUB.DIV)/236/2015-16 Dated: 06.10.2015

* Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

* Grade of Concrete : M₂₀

Compressive Strength as on : 28th day ✓

Sample Received on : 26.11.2015



Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)
1	29.10.2015	26.11.2015	8.139	478.3	21.26
2	29.10.2015	26.11.2015	8.296	496.3	22.06
3	29.10.2015	26.11.2015	8.375	516.3	22.95

* Information is furnished by the Customer/Representative

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Job No.: CTCE/BBMP/W.No.07/NVP/WMM/Gradation/2015-16

23.11.2015



GRADATION FOR WMM MORTH TABLE-400-11

Customer : Asst. Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Agency : Mr. Ninganagowda V Patil,
No.57/7, Sri. Krishna Nilaya, 2nd Main Road, Ganganagara Layout, Ganganagara, R.T.
Nagara Post, Bangalore - 560032.

Name of Work : Improvements of roads and drains in Amruthanagara 'C' Sector Main roads in Ward No.07
Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(B.T.P.SUB.DIV)/236/2015-16 Dated: 06.10.2015

Date of Testing : 23.11.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 7825

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	195	195	2.5	97.5	95-100
22.4	2500	2695	34.4	65.6	60-80
11.2	1250	3945	50.4	49.6	40-60
4.75	1150	5095	65.1	34.9	25-40
2.36	980	6075	77.6	22.4	15-30
0.600	750	6825	87.2	12.8	8-22
0.075	600	7425	94.9	5.1	0-8

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23.11.2015

Aggregate Impact Value

IS: 2386 Part IV

Customer	Asst. Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Agency	Mr. Ninganagowda V Patil, No.57/7, Sri. Krishna Nilaya, 2nd Main Road, Ganganagara Layout, Ganganagara, R.T. Nagara Post, Bangalore - 560032.
Name of the Work	Improvements of roads and drains in Amruthanagara 'C' Sector Main roads in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
Reference	AEE/(B.T.P.SUB.DIV)/236/2015-16 Dated: 06.10.2015
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	23.11.2015



Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	379	380	20.95
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	79	80	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	300	
4	Aggregate Impact value = percent fines $100 \times (W_2/W_1)\%$	20.84	21.05	

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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23.11.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	Asst. Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Agency	Mr. Ninganagowda V Patil, No.57/7, Sri. Krishna Nilaya, 2nd Main Road, Ganganagara Layout, Ganganagara, R.T. Nagara Post, Bangalore - 560032.
Name of Work	Improvements of roads and drains in Amruthanagara 'C' Sector Main roads in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
Reference	AEE/(B.T.P.SUB.DIV)/236/2015-16 Dated: 06.10.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	23.11.2015



Result : Flakiness Index = 11.05%

Elongation Index = 13.85%

Result : Combined Flakiness & Elongation index 24.90%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.07/NVP/SDBC/Bitumen/2015-16

05.01.2016

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CUSTOMER	Asst. Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	Mr. Ninganagowda V Patil, No.57/7, Sri. Krishna Nilaya, 2nd Main Road, Ganganagara Layout, Ganganagara, R.T. Nagara Post, Bangalore - 560032.
NAME OF THE WORK	Improvements of roads and drains in Amruthanagara 'C' Sector Main roads in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
REFERENCE	AEE/(B.T.P.SUB.DIV)/236/2015-16 Dated: 06.10.2015
SAMPLE I/D	Roads in Amruthanagara 'C' Sector in Ward No.07, BBMP, Bangalore.
DATE OF TESTING	05.01.2016



BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475.5	474.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	24.5	25.50
7. Bitumen content in %	4.90	5.10
8. Average	5.00	

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05.01.2016

GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CUSTOMER	Asst. Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	Mr. Ninganagowda V Patil, No.57/7, Sri. Krishna Nilaya, 2nd Main Road, Ganganagara Layout, Ganganagara, R.T. Nagara Post, Bangalore - 560032.
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REFERENCE	AEE/(B.T.P.SUB.DIV)/236/2015-16 Dated: 06.10.2015
SAMPLE I/D	Roads in Amruthanagara 'C' Sector in Ward No.07, BBMP, Bangalore.
DATE OF TESTING	05.01.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	35.26	7.42	7.42	92.58	90-100
4.75	255.5	53.73	61.15	38.85	35-51
2.36	46.36	9.75	70.90	29.10	24-39
1.18	39.62	8.33	79.23	20.77	15-30
0.3	33.25	6.99	86.22	13.78	9-19
0.075	39.62	8.33	94.56	5.44	3-8



Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	35.62	7.51	7.51	92.49	90-100
4.75	265.4	55.93	63.44	36.56	35-51
2.36	53.26	11.22	74.66	25.34	24-39
1.18	40.26	8.48	83.15	16.85	15-30
0.3	30.25	6.38	89.52	10.48	9-19
0.075	28.69	6.05	95.57	4.43	3-8

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